pendicularem egrederetur, ſumenda eſſet OB ſeu a ad contrarias partes centri O, & propterea ſignum ejus mutandum eſſet, & ſcribendum $-a$ pro $+a$. Quo pacto prodiret Medii denſitas ut $-\frac{a}{e}$. Negativam autem denſitatem (hoc eſt quæ motus corporum accelerat) Natura non admittit, & propterea naturaliter fieri non poteſt ut corpus aſcendendo ab A deſcribat circuli quadrantem AL. Ad hunc effectum deberet corpus a Medio impellente accelerari, non a reſiſtente impediri.

Exempl. 2. Sit linea $ALCK$ Parabola, axem habens OL horizonti AK perpendicularem, & requiratur Medii denſitas quæ faciat ut projectile in ipſa moveatur.

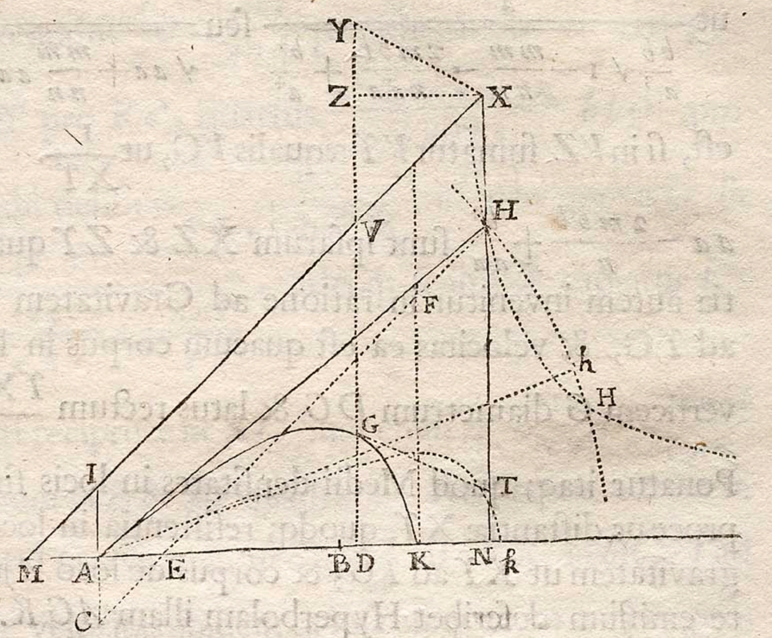
Ex natura Parabolæ, rectangulum ADK æquale eſt rectangulo ſub ordinata DG & recta aliqua data: hoc eſt, ſi dicantur recta illa b, AB a, AK c, BC e & BD o; rectangulum $a+o$ in $c-a-o$ ſeu $ac-aa-2ao+co-oo$ æquale eſt rectangulo b in DG, adeoq; DG æquale $\frac{ac-aa}{b}+\frac{c-2a}{b}o-\frac{oo}{b}$. Jam ſcribendus eſſet hujus ſeriei ſecundus terminus $\frac{c-2a}{b}o$ pro Qo, & ejus coefficiens $\frac{c-2a}{b}$ pro Q; tertius item terminus $\frac{oo}{b}$ pro Roo, & ejus coefficiens $\frac{1}{b}$ pro R. Cum vero plures non ſint termini, debebit quarti termini So^3 coefficiens S evaneſcere, & propterea quantitas $\frac{S}{R\sqrt{1+QQ}}$ cui Medii denſitas proportionalis eſt, nihil erit. Nulla igitur Medii denſitate movebitur Projectile in Parabola, uti olim demonſtravit *Galilæus*. Q. E. I.

Exempl. 3. Sit linea AGK Hyperbola, Aſymptoton habens NX plano horizontali AK perpendicularem; & quæratur Medii denſitas quæ faciat ut Projectile moveatur in hac linea.

Sit MX Aſymptotos altera, ordinatim applicatæ DG pro-

ductæ

ductæ occurrens in V, & ex natura Hyperbolæ, rectangulum XV in VG dabitur. Datur autem ratio DN ad VX, & propterea datur etiam rectangulum DN in VG. Sit illud bb; & completo parallelogrammo $DNXZ$, dicatur BN a, BD o, NX c, & ratio data VZ ad ZX vel DN ponatur eſſe $\frac{m}{n}$. Et erit DN æqualis $a-o$, VG æqualis $\frac{bb}{a-o}$, VZ æqualis $\frac{m}{n}\overline{a-o}$, & GD ſeu $NX-VZ-VG$ æqualis $c-\frac{m}{n}a+\frac{m}{n}o-\frac{bb}{a-o}$. Reſolvatur terminus $\frac{bb}{a-o}$ in ſeriem convergentem $\frac{bb}{a}+\frac{bb}{aa}o+\frac{bb}{a^3}oo+\frac{bb}{a^4}o^3$ &c. & fiet GD æqualis $c-\frac{m}{n}a-\frac{bb}{a}+\frac{m}{n}o-\frac{bb}{aa}o-\frac{bb}{a^3}o^2-\frac{bb}{a^4}o^3$ &c. Hujus ſeriei terminus ſecundus $\frac{m}{n}o-\frac{bb}{aa}o$ uſurpandus eſt pro Qo, tertius cum ſigno mutato $\frac{bb}{a^3}o^2$ pro Ro^2, & quartus cum ſigno etiam mutato $\frac{bb}{a^4}o^3$ pro So^3, eorumq; coefficientes $\frac{m}{n}-\frac{bb}{aa}$, $\frac{bb}{a^3}$ & $\frac{bb}{a^4}$ ſcribendæ ſunt,



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